UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/650,058	08/29/2000	Santosh P Abraham	2-48	8757

			EXAMINER
22046	7590	12/24/2003	ZHONG, CHAD

LUCENT TECHNOLOGIES INC.
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ART UNIT	PAPER NUMBER
2154	3

DATE MAILED: 12/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication app ars on the cover sheet with the correspond nc address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _17 June 2002_ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-9_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-9_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)		4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)		5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _2_ .		6) ☐ Other: .

DETAILED ACTION

1.   Claims 1-9 are presented for examination.

Claim Rejections - 35 USC § 112, second paragraph

2.   Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

> a.   The following terms lack antecedent basis:
>
>> i.   the sequence – claim 2.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United
> States before the invention thereof by the applicant for patent, or on an international application by another
> who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371 (c) of this title before the
> invention thereof by the applicant for patent.

4.   Claims 1, 2, 6, and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Enns et

al. (hereinafter Enns), US 6,658,010.

5.   As per claim 1, Enns teaches a method for use in a transmitter, the method comprising

the steps of using a downlink channel to convey information to a group of devices; and load

balancing the downlink channel (Col. 4, lines 24-40).

6.   As per claim 2, Enns teaches wherein the downlink channel comprises a sequence of

dwells, each dwell having a time period (Col. 12, line 12), and wherein the method further

comprises the step of detecting that at least one dwell of the sequence conveys more downlink information than the other dwells of the sequence as a prerequisite to performing the load balancing step (Col. 12, lines 11-25; Col. 13, lines 33-47).

7.   As per claim 6, Enns teaches a method for use in a transmitter, the method comprising the steps of using a downlink channel to convey information to a group of devices; and load balancing the downlink channel (Col. 4, lines 24-40). A processor for performing load balancing on the downlink channel (Col. 4, line 42).

8. As per claim 7, Enns teaches wherein the downlink channel comprises a number of dwells, each dwell having a time period, and wherein the processor performs the load balancing upon detection that at least one of the dwells conveys more downlink information than the other dwells (Col. 12, lines 11-24; Col. 13, lines 33-47; Col. 14, lines 1-4).

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 3-5, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enns et al. (hereinafter Enns), US 6,658,010, in further view of Kronz, US 6,577,610.

11.   As per claim 3, Enns teaches a method for use in a wireless system, the method comprising the steps of:

sending data to a group of N wireless endpoints over a communications channel comprising a sequence of time slots (Col. 4, lines 25-40);

detecting an imbalance such that some of the time slots convey more data than other time slots (Col. 14, lines 27-36).

12.   Enns does not teach shifting some of the data from at least one time slot to another time slot for reducing the detected imbalance.

13.   Kronz teaches shifting some of the data from at least one time slot to another time slot for reducing the imbalance (Col. 2, lines 29-30).

14.   It would have been obvious to one of ordinary skill in this art at the time of invention was made to combine the teaching of Enns and Kronz because they both dealing with load balancing the system. Furthermore, the teaching of Kronz to allow shifting some of the data from at least one time slot to another time slot for reducing the imbalance would improve the functionality for Enns's system by further introducing the ability to shifting of data to load balance between time slots.

15.   As per claim 4, Enns teaches wherein the detecting step includes the steps of:

measuring the amount of data sent in each of M timeslots to the N wireless endpoints (Col. 14, lines 28-36); and

comparing the measured data for at-least-on of the M timeslots to others of the M timeslots for detecting the imbalance (Col. 14, lines 35-64).

16.   As per claim 5, As per claim 5, claim 5 is rejected for the same reason as the rejection to claim 3 above. However, Enns and Kronz does not teach the concept of every other time slot. The examiner is taking Official Notice that concept of every other time slot is notoriously well know in half duplex systems, which transmits data only every other cycle/period, as it is disclosed within applicant's system. The detection as well as the shifting aspects of this claim would be obvious to one of ordinary skill in this art at the time of invention was made as well, because

under half duplex systems, only every other time slot have data available for detection and shifting for load balancing purposes.

17.   As per claim 8, Enns teaches Apparatus for use in a wireless system, the apparatus comprising:

a scheduler for retrieving the stored data and for measuring the amount of stored data transmitted in each of M timeslots to the N wireless endpoints, and for comparing the measured data for at-least-one of the M timeslots to others of the M timeslots for detecting an imbalance in the transmission (Col. 14, lines 27-36, lines 53-64; Col. 16, lines 3-15)

18.   Enns does not teach the shifting of data from at least one time slot to another time slot for reducing the detected imbalance.

19.   Kornz teaches the shifting of data from at least one time slot to another time slot for reducing the detected imbalance (Col. 2, lines 29-30).

20.   Enns and Kornz does not teach a memory for storing data for transmission to a group of N wireless end points. However, Official Notice is taken by the Examiner that a memory is notoriously well known for advantage of storing data in a system.

21   As per claim 9, claim 9 is rejected for the same reason as the rejection to claim 8 above.

22.   As per claim 9, claim 7 is rejected for the same reason as the rejection to claim 8 above. However, Enns and Kronz does not teach the concept of every other time slot.

The examiner is taking Official Notice that concept of every other time slot is notoriously well know in half duplex systems, which transmits data only every other cycle/period, as it is disclosed within applicant's system. The detection as well as the shifting aspects of this claim would be

obvious to one of ordinary skill in this art at the time of invention was made as well, because under half duplex systems, only every other time slot have data available for detection and shifting for load balancing purposes.

Conclusion

23.　　The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents and publications are cited to further show the state of the art with respect to "A load balancing technique for a wireless Internet access system".

i.	US 5,283,897	Georgiadis et al.
ii.	US 4,621,359	McMillen et al.
iii.	US 5,860,137	Raz et al.
iv.	US 6,148,324	Ransom et al.
v.	US 5,430,731	Umemoto et al.
vi.	US 2002/0026560	Jordan et al.
vii.	US 6,598,232	McAlear.
viii.	US 6,438,652	Jordan et al.
ix.	US 6,389,474	Chien et al.
x.	US 5,499,243	Hall.
xi.	US 5,920,571	Houck et al.

xii.　　"A Model for Teletraffic Performance and Channel Holding Time Characterization in Wireless Cellular Communication with General Session and Dwell Time Distributions". Phillip V. Orlik and Stephen S. Rappaport, *Fellow, IEEE*. 1998.

xiii.　　Operating System Principles 1973. Per Brinch Hansen, p214-215.

xiv.　　Introduction to Telecommunication Electronics second edition 1995. A. Michael Noll, p300-301.

xv.   "Dynamic Load balancing of Iterative Data Parallel Problems on a Workstation Clustering" 1997, Hye-Seon Maeng, Hyoun-Su Lee, Tack-Don Han, Sung-Bong Yang, and Shin-Dug Kim.

xvi.   "Flow control and dynamic load balancing in Time Warp" 4/16/2000, Myongsu Choe. Tropper, C.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad Zhong whose telephone number is (703) 305-0718. The examiner can normally be reached on M-F 7am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 703-305-9678. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

CZ
October 22, 2003

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